

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jeffrey A. Nelson
Examiner: Alicia Torres
Serial No.: 10/765,228 Group Art Unit 3671
Filed: 01/27/2004 (Atty. Ref. No. 16663-US)
For: CLEANING SHOE SPREADERS

Moline, IL 61265
12 February 2007

APPLICANT'S APPEAL BRIEF

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Real Party in Interest

The real party in interest is Deere & Co. to whom this application was assigned by applicant according to the assignment document recorded with the Patent Office on 3/2/2001 at Reel 014939, Frame 0522.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-5, and 11-21 are currently pending in the above-identified application. Claims 1-5, and 11-21 are rejected. Claims 1-5, and 11-21 are appealed.

Status of Amendments

There are no outstanding amendments.

Summary of claimed subject matter

Claim 1 (at least par. [0017] - [0020], pgs. 4-5) recites a spreader (60, FIGS. 2,3) for a movable cleaning shoe (40, FIG. 2) having a panel (62, FIG. 3) with an inner edge and an outer edge, the inner edge having a mounting assembly (68, FIG. 3) and the outer edge having an attached weight (72, FIG. 3), the panel (62, FIG. 3) being flexible and resilient and resiliently flap back and forth due to movement of the shoe (40, FIG. 2).

Claim 5 (at least par. [0017] - [0020], pgs. 4-5) recites a cleaning shoe (40, FIG. 2) for an agricultural harvesting machine that has a movable frame (44, FIG. 2) having sidewalls; a sieve (46, FIG. 2) supported on the frame, the sieve (46, FIG. 2) defining a longitudinal flow path for grain being cleaned, the sieve (46, FIG. 2) having a plurality of longitudinally extending dividers (58, FIG. 2); and spreaders (60, FIG. 2) mounted to and extending from the sidewalls, wherein the spreaders (60, FIG. 2) comprise flexible and resilient panels (62, FIG. 3) having an attached weight (72, FIG. 3) at an outer edge thereof that resiliently flap back and forth due to movement of the frame (44, FIG. 2).

Claim 15 (at least par. [0017] - [0020], pgs. 4-5) recites a cleaning shoe (40, FIG. 2) for an agricultural harvesting machine that includes a movable frame (44, FIG. 2) with sidewalls; a sieve (46, FIG. 2) supported on the frame (44, FIG. 2), the sieve (46, FIG. 2) having longitudinally extending dividers (58, FIG. 2) defining a longitudinal flow path for grain being cleaned; and spreaders (60, FIG. 2) mounted to and extending from the dividers (58, FIG. 2) and the sidewalls into the longitudinal flow path, the spreaders (60, FIG. 2) comprising flexible and resilient panels (62, FIG. 3) having a weight (72, FIG. 3) attached to an outer edge thereof that resiliently flap back and forth due to movement of the frame (44, FIG. 2).

Grounds of rejection to be reviewed on appeal

First ground: Claims 1-4 are unpatentable under 35 USC 103 based on Deiss (USPN 2,732,941) in view of Kreienbaum (USPN 3,722,802).

Second ground: Claims 5, 11, 12, 15-18, 20 and 21 are unpatentable under 35 USC 103 based on Deiss in view of Hagerer (USPN 4,875,889) and Kreienbaum.

Third ground: Claims 13,14 and 19 are unpatentable under 35 USC 103 based on Deiss in view of Hagerer and Kreienbaum and further in view of Balthes (USPN 3731,475).

Argument

Background:

Deiss describes a sieve and chaffer similar to the claimed sieve and chaffer but with a stationary baffle (41,43) for spreading the grain around.

Kreienbaum is unrelated to combines, chaffers or sieves. Kreienbaum describes a traditional agricultural spreader (aka a manure spreader) with a spinning axle from which tines extend. These tines extend outward from the axle under centrifugal force when the axle is spun at high speed such that their free ends engage the manure, tear it apart and fling torn-off chunks across the agricultural field.

First ground:

In paragraph 2 of the final Office Action (the “OA”) (mailed 08/10/2006) the Examiner rejected claims 1-4 under 35 U.S.C. §103(a), as being unpatentable over US Patent 2,732,941 to Deiss (hereinafter “Deiss”) in view of US Patent 3,722,802 to Kreienbaum (hereinafter “Kreienbaum”). The Applicants respectfully traverse this rejection of the claims. The Examiner has failed to make a prima facie obviousness rejection by failing to identify any reference that teaches a spreader having a panel that is “flexible” and “resilient” so that it can “flap back and forth due to movement of the shoe” as recited in claim 1.

The Examiner stated that “the panels (41) [of Deiss] have an inherent flexibility and resilience due to the nature of the material from which they are constructed, as per claim 1”. While they may have an “inherent flexibility and resilience” -- i.e. they have a modulus of elasticity (like every material) -- they are not inherently “flexible” or “resilient” as recited by the claims.

The Examiner also stated that the outer edge (41) of Deiss “inherently has a weight” but that it does not have “an attached weight on the outer edge that causes the panel to flap back and forth.” The Examiner explains that Kreienbaum’s manure spreader can nonetheless be modified by “fitting additional weights” (OA, p.2, last

line) to Kreienbaum's rotor in order to "shift the center of gravity to improve the effect of centrifugal force" (OA, p.3, lines 2-3). This teaching comes from Kreienbaum, who states that

"additional weights may be fitted to the spreader tools in order to displace their center of gravity, e.g. to shift them further outwards and thus to improve the effect of centrifugal force at a given carrier speed. This may, in particular, be an advantage when handling tough and heavy material.

Kreienbaum, col. 7, lines 23-29.

In Kreienbaum's manure spreader, centrifugal force generated by the rapidly spinning carrier¹⁴ (i.e. the rotating spreader shaft) is the only thing that holds his tools outward where they can bash against the "tough and heavy" clods of manure. As he explains:

As carrier 14 rotates, the spreader tools 19 tend to adopt a radial attitude under the effect of centrifugal force whereas under the effect of gravity, with the carrier 14 stationary, they hang freely down.

The Deiss and Kreienbaum references cannot be combined because they are not from analogous arts. They have different patent classifications. They solve different problems. Finally, the Examiner has engaged in impermissible hindsight to find the teaching to combine.

Deiss's spreaders (baffles 41, 43) are fixed and stationary. They do not move and thus generate no centrifugal force. They are stationary, positioned above an oscillating bed of grain that flows rearward to scrape off the top of the layer of loose grains and push them toward the middle of the sieve/chaffer.

Kreienbaum's spreader tool is a pivotal bar coupled to a high speed rotating shaft that spins outward to hammer against clods of manure, bust them apart and fling them far over the ground.

Additional weight would enhance Kreienbaum's operation since it is connected to a spinning shaft. Increased weight would not do anything to improve the performance of Deiss stationary spreaders (baffles 41,43) since they are stationary.

The Examiner has relied on the Applicant's own teaching of a spreader panel

that flaps back and forth to manufacture a combination of Deiss and Kreienbaum.

Second ground:

In paragraph 4 of the final Office Action the Examiner rejected claims 5, 11, 12, 15-18, 20 and 21 under 35 U.S.C. §103(a), as being unpatentable over Deiss in view of Kreienbaum and further in view of Hagerer (USPN 4,875,889) (hereinafter (Hagerer)).

The Applicants respectfully traverse this rejection of the claims: see the Applicant's arguments above regarding the First Ground. The Examiner's grounds are the same regarding the combination of Deiss and Kreienbaum. The Applicant's arguments are therefore equally applicable here.

Furthermore, Hagerer teaches electrically adjustable vanes that push the grain to one side or the other. Nowhere does Hagerer discuss vanes that flap or vanes with attached weights.

Third ground:

In paragraph 6 of the final Office Action the Examiner rejected claims 5, 11, 12, 15-18, 20 and 21 under 35 U.S.C. §103(a), as being unpatentable over Deiss in view of Kreienbaum and Hagerer as applied to claims 5 and 11, and further in view of Balthes (USPN 3,731,475)(hereinafter "Balthes").

The Applicants respectfully traverse this rejection of the claims: see the Applicant's arguments above regarding the First Ground and the Second Ground. The Examiner's grounds are the same regarding the combination of Deiss and Kreienbaum and Hagerer. The Applicant's arguments are therefore equally applicable here.

The Examiner states that Deiss, Kreienbaum, and Hagerer "fail to show wherein the panels are rubber", and that it would be obvious to "include the rubber panels of Balthes on the device of Deiss and Hagerer and Kreienbaum in order to provide flexibility."

There is no teaching to provide flexibility. Deiss discloses stationary spreaders (baffles 41,43) with no weights. Kreienbaum discloses spreader tools 19 that are pivotally coupled to a shaft to "swing" or "pivot" about that pivot point when the hit clods of manure. Nowhere does Kreienbaum suggest that flexibility" or

“flapping” of the tools (as recited in the present claims) is beneficial. Hagerer discloses vanes that can be moved inward or outward to guide the grain. Hagerer also does not disclose or suggest that “flexibility” or “resilience” or “flexibility” or “flapping” of his vanes is beneficial.

Balthes discloses a tobacco plant leaf harvester with “flexible, finger-like paddles [44]” mounted on a moving chain (48). As leaves are cut from the tobacco plant, they fall onto the paddles (44) which hold them in the air above the knives. Balthes’ paddles convey and orient leaves that are cut from a tobacco plant to a vertical conveyor. The conveyor paddles recirculate to the front of the cutting platform and repeat the process (Balthes, FIG. 3, col. 3, lines 27-63). The conveyor paddles in the Balthes conveyor travel at the same speed as the tobacco plants (col. 9, lines 46-49), supporting the leaves untouched above the knives (col. 9, 58-63). The Balthes paddle is not a spreader, but a conveyor. It is not for a grain harvester, but for a tobacco harvester. It does not spread grain that is traveling on a sieve or chaffer underneath it, but supports and conveys leaves, holding them up above a knife.

In short, the Deiss baffles 41, 43 and the Balthes conveyor paddles 44 are from non-analogous art. While the Balthes conveyor paddles are described as “flexible” Balthes does not explain why conveyor paddles should be flexible, nor does Balthes explain how much flexibility is appropriate. At best, Balthes teaches flexible moving conveyor paddles. Since the Deiss paddles are stationary and do not convey material through the sieve and chaffer, Balthes’ teaching of flexible conveyor paddles has nothing to teach or suggest regarding Deiss-type stationary spreaders.

Again, the Examiner resorts to impermissible hindsight when she states that it would have been obvious to provide Deiss baffles with flexible Balthes conveyor paddles “in order to improve flexibility” when there is nothing in either Balthes, Kreienbaum or Deiss to suggest that Deiss-type baffles need to be flexible.

Deiss that suggests spreader paddles should be flexible. Only the present application teaches the benefit of flexible resilient spreader panels that flap.

Conclusion:

At least for the above reasons, we ask that the final rejection of 08/10/2006 be reversed.

Respectfully,

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ClaimsAppendix

Claim 1. A spreader for a movable cleaning shoe, the spreader comprising:

a panel having an inner edge and an outer edge, the inner edge is provided with a mounting assembly and the outer edge is provided with an attached weight, wherein the panel is flexible and resilient and resiliently flaps back and forth due to movement of the shoe.

Claim 2. The spreader as defined by claim 1 wherein the cleaning shoe reciprocates.

Claim 3. The spreader as defined by claim 1 wherein the cleaning shoe shakes.

Claim 4. The spreader as defined by claim 1 wherein the mounting assembly defines an acute downstream angle for the panel.

Claim 5. A cleaning shoe for an agricultural harvesting machine comprising:

a movable frame having sidewalls;

a sieve supported on the frame, the sieve defining a longitudinal flow path for grain being cleaned, the sieve having a plurality of longitudinally extending dividers located between and extending parallel to the sidewalls affixed to a top surface thereof; and

spreaders mounted to and extending from the sidewalls and the plurality of longitudinally extending dividers into the longitudinal flow path, the spreaders comprising flexible and resilient panels having an attached weight at an outer edge thereof that resiliently flap back and forth due to movement of the frame.

Claims 6 -10 (cancelled).

Claim 11. The cleaning shoe blade as defined by claim 5 wherein the panels extend downstream at an acute angle to the sidewalls and the dividers.

Claim 12. The cleaning shoe as defined by claim 11 wherein the panels have an inner edge provided with a mounting assembly.

Claim 13. The cleaning shoe as defined by claim 5 wherein the panels comprise a flexible and resilient rubber belting material.

Claim 14. The cleaning shoe as defined by claim 11 wherein the acute angle is between 30 and 60 degrees.

Claim 15. A cleaning shoe for an agricultural harvesting machine comprising:
a movable frame having sidewalls;
a sieve supported on the frame, the sieve being provided with longitudinally extending dividers defining a longitudinal flow path for grain being cleaned; and
spreaders mounted to and extending from the dividers and the sidewalls into the longitudinal flow path, the spreaders comprising flexible and resilient panels having a weight attached to an outer edge thereof that resiliently flap back and forth due to movement of the frame.

Claim 16. The cleaning shoe as defined by claim 15 wherein the panels extend downstream at an acute angle to the dividers.

Claim 17. The cleaning shoe as defined by claim 16 wherein the panels have an inner edge provided with a mounting assembly.

Claim 18. The cleaning shoe as defined by claim 16 wherein the acute angle is between 30 and 60 degrees.

Claim 19. The cleaning shoe as defined by claim 18 wherein the panels comprise a flexible and resilient rubber belting material.

Claim 20. The cleaning shoe as defined by claim 15 wherein the movable frame reciprocates.

Claim 21. The cleaning shoe as defined by claim 15 wherein the sieve is a chaffer sieve.

Evidence appendix

There is no evidence to be appended.